

Guide for Reading

Focus on this question as you read.

- ▶ How does the body maintain a stable internal environment?

1-1 The Body as a Whole

Every minute of the day, even when you are asleep, your body is busily at work. Blood is being pumped through blood vessels by your heart. Air is being pushed in and out of your body by your lungs. Your intestines are giving off chemicals that break down the food you have eaten into smaller parts. Your nerves are sending out signals from the brain to all parts of your body. Chemical messengers are regulating all kinds of processes.

To you these activities probably seem quite different—and in many ways they are. However, all these activities have the same purpose: to delicately control the body's internal environment. This internal environment must remain stable, or constant, even during extreme changes in the activities of the body or in its surroundings.

For example, you may eat a large amount of sweets (foods containing mainly sugar) on one day and none at all on the next day. The amount of sugar that goes into your body is quite different on the two days. But the amount of sugar in your blood

Figure 1-1 No matter what the weather is outside, the human body is able to maintain homeostasis, or a stable internal environment.

